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ABSTRACT

A project was conducted to identify criteria and procedures for using a distance learning delivery system at the University of Texas TeleLearning Center to teach Health Occupations II to high school seniors. Another objective was expanding the current distance learning program for health occupations to include between 15 and 20 school districts. The audio-based distance learning program used a variety of innovative instructional techniques, including computer-assisted instruction, videotaped course content, clinical rotations, and other proven electronic techniques. Program staff included site facilitators, health occupations teachers, and clinical coordinators. Only one student was enrolled in the course, but the course was taught for the entire year with no major problems. The student rated both the class room and the clinical experiences highly, and the public also reacted positively to the program. Two other courses were also taught by distance education--Health Occupations I and Health Care Sciences. The project's other objective, however, to expand the current distance learning program to 15 to 20 sites, was not met. The number of sites remained at 10, with 5 others involved but not offering the courses. (KC)

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Final Report

Vocational Education Distance Learning Delivery System

Darcy Walsh Hardy

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Sponsored Cooperatively by
Texas Education Agency

and

The University of Texas at Austin
Extension Instruction and Materials Center
Division of Continuing Education

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Vocational Education
Distance Learning Delivery System

Problem Area Toward Which the Project Was Directed

The urgent need for health professionals continues, and several health occupations are on the priority list approved by the Texas State Board of Education (SBOE). Despite these facts, many small and/or rural school districts are unable to offer health occupations programs because of district size and cost restrictions. As a result, the needs of students hoping to enter health professions have not been met by traditional approaches.

During the 1987-88 school year, The University of Texas TeleLearning Center at the Extension Instruction and Materials Center (EIMC) began offering Health Care Science (HCS) by distance learning. During the 1988-89 school year, the TeleLearning Center offered Health Occupations I (HO I) which includes off-campus clinical experiences (rotations), as well as typical classroom activities. Health Occupations II (HO II), the third course in the Health Occupations sequence, is designed for students who have completed HO I and wish to continue the health education experience during their senior year. This current project was designed to meet the needs of these students through the development and implementation of HO II by distance learning. The project also focused on increasing the number of school districts involved in the distance learning program as a whole.

Goals and Objectives of the Project

The specific objectives of this project were–

1. To identify criteria and procedures for utilizing a distance learning delivery system to teach Health Occupations II (HO II). The system was to provide students with laboratory/clinical experiences for learning skills related to health occupations.

2. To expand the current distance learning program for health occupations to include between 15 and 20 school districts. The audio-based distance learning program was to utilize a variety of innovative instructional techniques including (1) computer-assisted instruction; (2) videotaped course content; (3) clinical rotations; and (4) other proven sources for instruction through electronic techniques.

Description of the General Project Design and the Procedures Followed

The basic distance learning delivery system used in this project was initially developed during 1987-88 as a pilot project teaching Health Care Science (HCS). Because it was well-received by both students and administrators (3 sites, 7 students), the initial grant was continued during the 1988-89 school year to pilot -est teaching Health Occupations I by distance learning (7 sites, 10 students), as well as HCS. Both pilot projects were based on audioconferencing with classroom instruction presented via real-time interactive audio. The programs were supplemented with written materials provided by EIMC, as well as textbooks, videotapes, computer-assisted instruction (CAI), and electronic mail (Electric Pages). Media was selected for use based on its appropriateness for the content to be conveyed. Electronic mail also allowed students to experience firsthand some of the new educational technologies available today. All of the supplemental components of the program were selected based on their reliability, ease of use, and easy accessibility to the districts. The success of both HCS and HO I provided the encouragement for this year's

project: the addition of Health Occupations II (HO II) to the program. An advisory committee assisted in the development of the curriculum for the course.

The advisory committee also suggested ways to handle the clinical component of HO II. As in HO I, the clinical experiences or rotations in HO II require the placement of students at health care facilities. Sites for placement included hospitals, emergency clinics, veterinary clinics, dental offices, geriatric care centers, etc.; because of the lack of facilities in some rural districts, we often got very creative in setting up the rotations. In HO II, students began the clinical rotations during the third week of school. From that point until the end of the year, the students were in rotation four days each week. HO I students attended six rotations during the year; but since HO II students had already passed that course, they were allowed to select one or two rotations on which to focus for the entire year. This gave the HO II students the opportunity to receive intensive instruction in the areas they had chosen as serious career possibilities. On the one day each week that HO II students received audio instruction, they learned more about the health care field and gained information concerning the continuation of their education beyond high school.

Site facilitators, who were selected by district officials, provided administrative supervision at the participating schools. (These same site facilitators worked with the HCS and HO I students, as well.) They served as contact persons for the teacher and the program manager and were responsible for monitoring student attendance and general conduct during the HO II classes, for ensuring that all equipment was working properly, and for general trouble shooting at their sites. They also proctored quizzes, tests, and assignments given by the instructor, and then mailed them to the instructor.

The site facilitators were trained during a 3-hour audio-based session in August 1989. This training session was designed to provide an opportunity for the facilitators to ask questions and receive general instruction about the program. Each facilitator was provided with a copy of EIMC's *Handbook for Site Facilitators*, and the training session involved explanations of each section of the *Handbook*. During the session, the site facilitators became thoroughly oriented to their roles, met program personnel, and became acquainted with the audioconferencing equipment. During the school year, they provided progress reports to the project manager, indicating the status of the program at each site. Because HO II was new and taught at only one site, the program manager maintained closer contact with the site facilitator at that site to ensure that the program was running smoothly.

The HO II teacher provided academic supervision and instruction. In addition to these duties, she developed the instructional program for HO II, wrote the daily lesson plans, and integrated the HO II clinical component into the overall plan. She was assisted in her endeavors by four clinical coordinators (one for HO II), who were also health occupations teachers. The instructor also developed the scope and sequence for the course which included all of the required essential elements listed in Chapter 75 of the SBOE rules and followed Texas Education Agency vocational area recommendations for the course.

Clinical coordinators were responsible for organizing and monitoring the clinical experiences of all HO I and HO II students. Like the site facilitators, the clinical coordinators participated in an audioconference training session. They too were provided with a guide, *Handbook for Clinical Coordinators*, and were instructed on its contents. The HO II clinical coordinator immediately made a trip to the site and surrounding medical facilities, as HO II rotations were to begin in September. Because the school district was already familiar with the program, the coordinator went straight to the clinical facilities to review the rotation station(s). She then made follow-up telephone calls to the site supervisor and resolved any problems which occurred. It was not necessary for the clinical

coordinator to make a second visit for the HO II rotations, because they ran smoothly throughout the year.

The second objective—to expand the current distance learning program for health occupations to include 15 to 20 school districts—was more difficult to implement than the first. In September 1989, the project manager took over the distance learning program, and the management of the UT TeleLearning Center. Recruitment efforts were made by the former project manager during the 1988-89 school year, expanding the program from seven to ten sites for the 1989-90 school year. Five additional sites remained involved in the program but were inactive during the year due to a variety of reasons, such as scheduling problems and budget restrictions.

Recruitment activities for the 1990-91 school year began in November 1989 and continued through August 1990. It was the project manager's desire to have 50 sites active by September 1990. Letters and announcements were sent to over 800 independent school districts (ISDs) with enrollments of 3,000 students or less. Of those 800 ISDs, approximately 125 requested additional information about the program. During the months of February, March, April, May, and June, personal telephone calls were made to the sites and information packets were mailed. Unfortunately, many interested school districts were highly involved in the funding equity issue which surfaced during those months. These districts informed us they would have to wait until that issue was solved before pursuing our program.

By the end of June 1990, approximately 25 school districts (including current participants) were expected for the 1990–1991 school year. However, during the month of August, several school districts received additional budget restrictions and were forced to eliminate the program. Some districts whose students register in August had to drop the program due to scheduling difficulties. On September 4, 1990, we had 12 active sites. Most of the school districts who were forced to abandon the program plan to become active participants for 1991–1992. It should be noted that every effort was made during the 1989–1990 school year to recruit new districts for the future and that these efforts will continue in the future.

Program Faculty

The teaching team for HO II consisted of a teacher and a clinical coordinator. The teacher was a certified health occupations teacher and held a bachelor's degree in nursing. She had been teaching in the field for many years and had supervised several courses involving clinical rotations. She had also served on the advisory committee for the first two years of the project and had immediately proven her ability to effectively use the interactive audio delivery system.

The teacher was responsible for organizing and developing the instructional plan, presenting most of the classroom portion of the course, coordinating the activities of the clinical coordinators, integrating the clinical component into the overall learning experience, and evaluating student progress and performance.

The basic requirement for the clinical coordinator was teacher certification in health occupations. Experience in organizing and running a clinical rotation program was an additional qualification, as were time to carry out the assignment, geographical proximity to the site supervised, and enthusiasm for the project. The clinical coordinator for HO II had served on the advisory committee during the first two years of the pilot program.

The Student

The student who participated during this first year of HO II by distance learning had successfully passed HO I by distance learning the year before. She was a senior student and had decided she would definitely enter the health care field upon graduation as she attended college on a part-time basis. This student had demonstrated her maturity and ability to handle self-direction during her year in HO I. She continued to present these characteristics this year as well.

Instruction

Health Occupations II was offered as a two- or three-unit course encompassing two or three hours of instruction daily. In this case, the student took the course as a two-hour class. The teacher met with the student by audioconference one hour each day, Monday through Friday, for the first two weeks of class. The second hour each day was used for supplemental activities, such as individualized rotation materials, videotapes, CAI, and in-class demonstrations by local experts. Other communications were conducted through electronic mail and the postal service. After the first two weeks of class, the student met with the instructor for one hour each Monday. Again, the second hour of the day was used for individualized study or other supplemental activities. On the remaining four days of the week, the student spent the two-hour block observing and assisting at her clinical rotation site(s). During the clinical experience, the student had the opportunity to associate with health professionals to discuss problems and issues and to receive feedback on her performance.

Student performance was monitored in the same manner as HO I clinical rotation experiences. That is, her general conduct, such as attendance, cooperation, and attitude, was observed by the site facilitator and clinical supervisory personnel. Scholastic performance was assessed in traditional ways: she was evaluated on the quality of her written assignments, periodic exams, final examinations, and class participation. Performance in the clinical rotation was evaluated on the basis of attendance, promptness, attitude, appropriateness of attire, initiative, and written observational summaries. Timely feedback was provided orally and in writing by the teacher, clinical coordinator, and, when appropriate, the site facilitator and/or other school personnel. Six-weeks and final grades were assigned by the teacher and reported to the site facilitator, who then gave the grades to the school registrar for inclusion on the student's permanent report cards. (The teacher will retain the student's grades for five years as documentation of the determination of final grades.) A competency profile was also completed for the student and will be retained for five years.

Results and Accomplishments of the Project

The project was able to successfully meet its original goal of developing an effective and efficient system for delivering Health Occupations II (HO II) via distance learning. Although only one student was enrolled in HO II, the course was taught for the entire year with no major problems. The distance learning delivery system for an HO II class, including clinical experiences, was developed, field-tested, and refined.

Evaluation Procedures and Findings

As with the piloting of HO I, the HO II pilot program evaluation consisted of both formative and summative evaluations to ensure quality control for both this year's and future classes.

The first part of the evaluation process was an attitude questionnaire used to determine any apprehensions that students might have had about the delivery system. Any apprehensions were then diffused by project personnel. The second step in the formative evaluation consisted of EIMC's regular contacts with program personnel, both written and verbal. The program manager spoke frequently with site facilitators for HO II, as well as HO I and HCS. Site facilitators submitted regular progress reports to the program manager, and their opinions were solicited throughout the development of HO II. Clinical coordinators and supervisors were also asked to evaluate the clinical experiences of the HO II student.

Forms were provided for the HO II student to report any problems encountered during the clinical rotation. The HO II student submitted a weekly report to the teacher, detailing the activities she experienced. The reports were used to assist the teacher in her evaluation of the student, and to assist the program manager in determining the effectiveness of the clinical component for HO II.

The summative evaluation included student comments and opinions of the course and the delivery system. HCS, HO I, and HO II students all received the same evaluation form, with HO I and HO II students receiving additional questions concerning their rotation experiences. The questionnaire measuring attitudes toward the distance learning method was issued at the end of the school year. The information gained is represented in Figures 1 through 5 at the end of this report. Since there was only one HO II student enrolled in the program, HO I and HCS student attitudes are also included in these figures.

On the summative evaluation, the student in HO II rated both the classroom and clinical experiences highly. Again, because there was only one student enrolled in HO II, it is helpful to include the responses given by HCS and HO I students as well (see Figures 6-9). Furthermore, students stated that, when compared to typical classroom experiences, they generally learned more from the Health Occupations courses, worked harder in these classes, enjoyed these classes more, and had about the same level of interaction with the teacher; Figure 10 graphically represents these results.

Success of this program is also exemplified by the positive reactions of the public to the program. In addition, most of the clinical supervisors have remained very enthusiastic about the program and have enjoyed remaining active as participants.

Conclusions, Implications, and Recommendations for the Future

The three health occupations courses designed for distance learning—Health Care Science (HCS), Health Occupations I (HO I), and Health Occupations II (HO II)—have demonstrated that these courses can be successful in helping meet the needs of rural communities and the students in rural districts by offering alternatives they would not otherwise have. Furthermore, these courses can be taught at a reasonable cost to the districts when compared to other distance learning delivery systems or live instruction (teacher in classroom). The implications of these facts are that other courses should and will be developed to provide educational opportunities to students residing in rural communities.

The following recommendations are being made. First, all three courses of health occupations education should continue to be taught via the delivery system at EIMC. Second, efforts should be made to continue the expansion of the program, through a variety of recruitment methods. Third, additional vocational education and general education courses, normally unavailable to students in these rural settings, should be developed using this same system. And fourth, other projects should be funded by the Texas Education Agency to assist in meeting the needs of both students and teachers by using this exciting and effective technology.

HOE Student Attitudes Toward Learning Mediums 1989–90 School Year

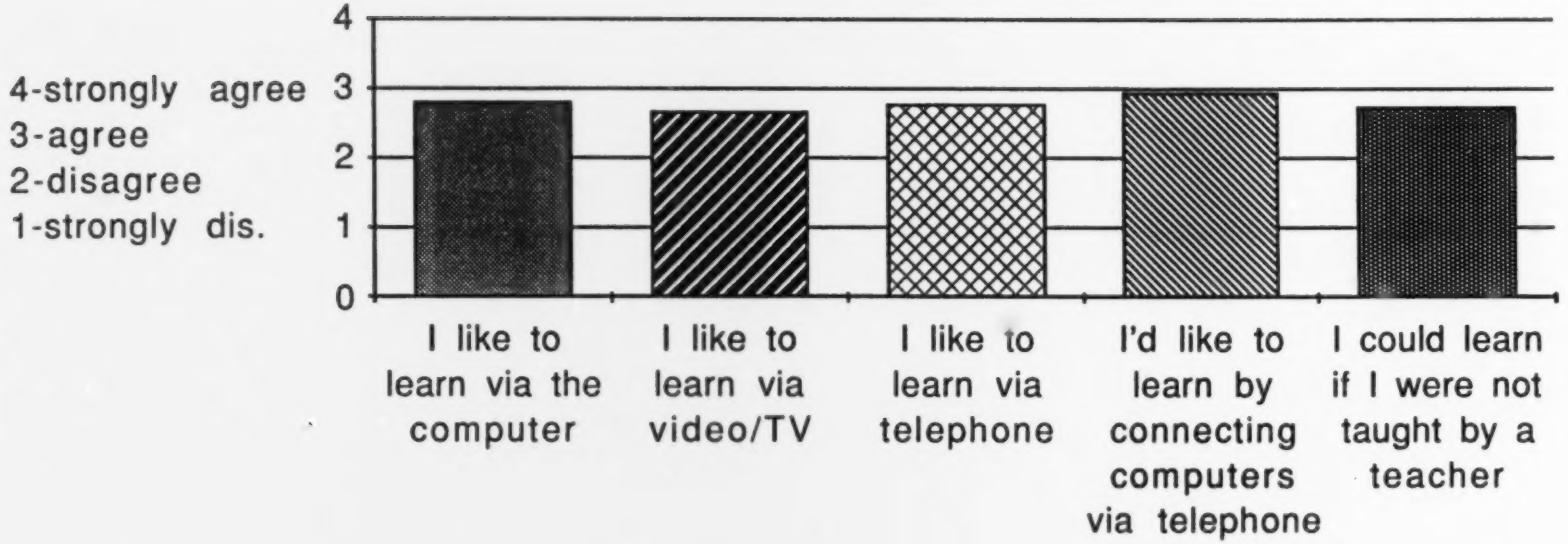

Figure 1

HOE Student Attitudes Toward Learning
1989–90 School Year

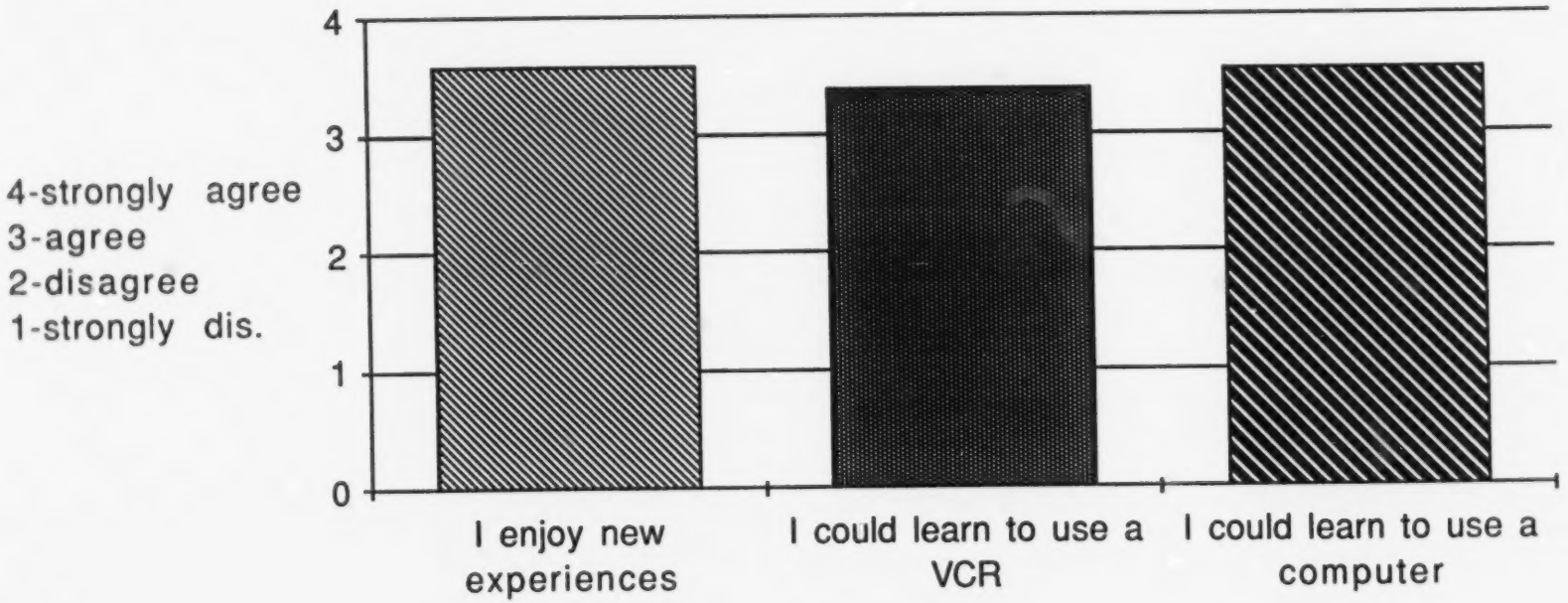

Figure 2

HOE Student Attitudes Toward Technologies and Jobs
1989–90 School Year

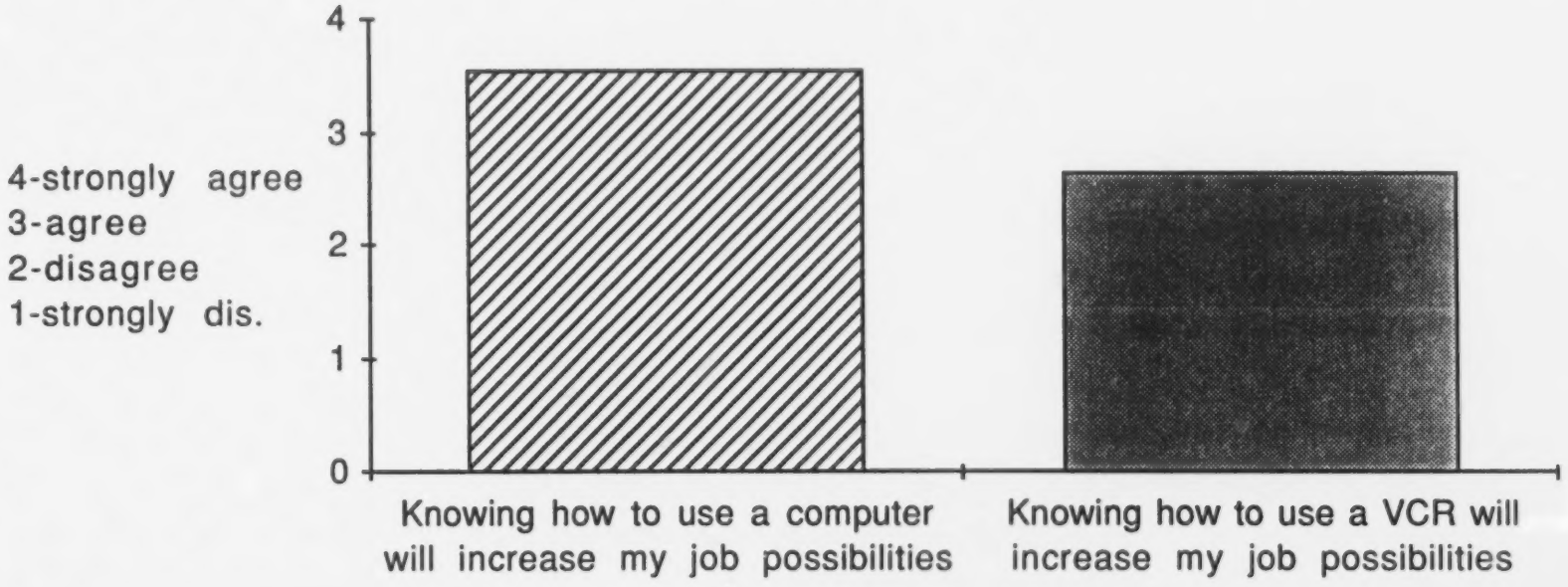

Figure 3

HOE Student Preferences for Teaching Mediums 1989–90 School Year

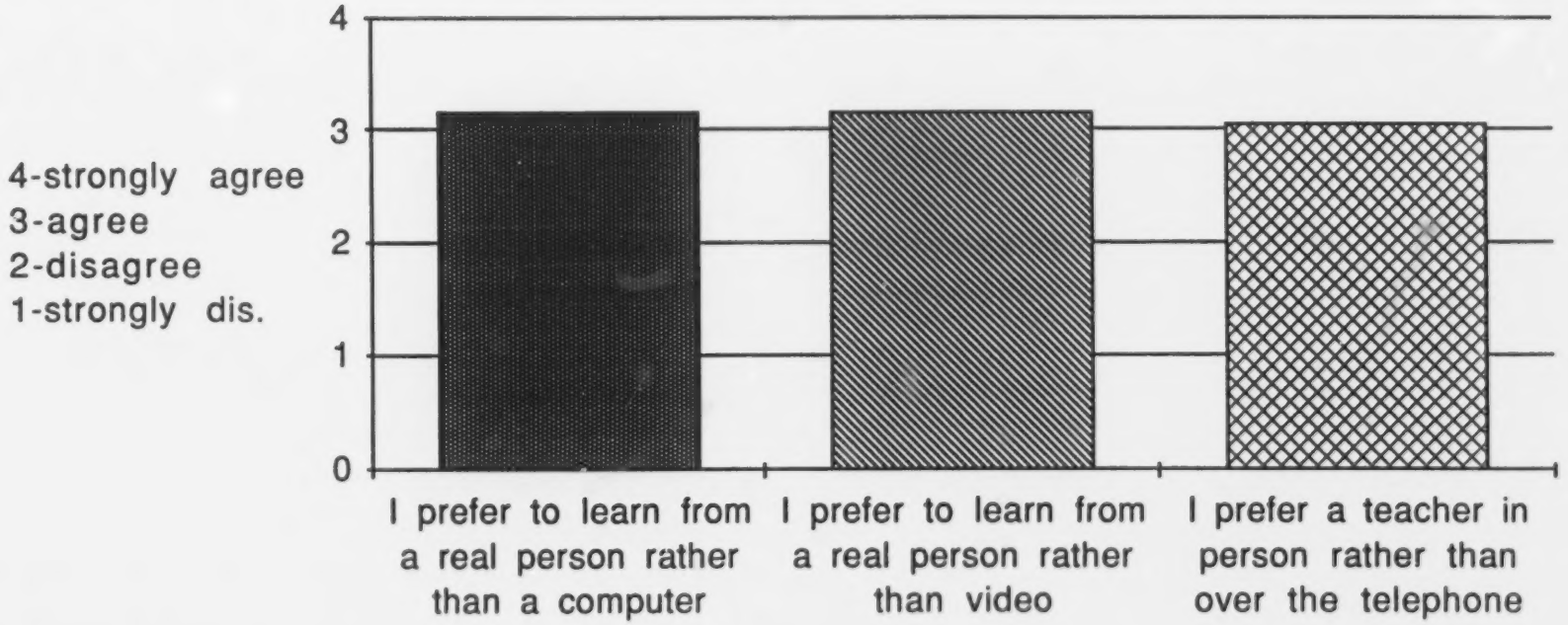

Figure 4

HOE Student Attitudes Toward Technologies 1989–90 School Year

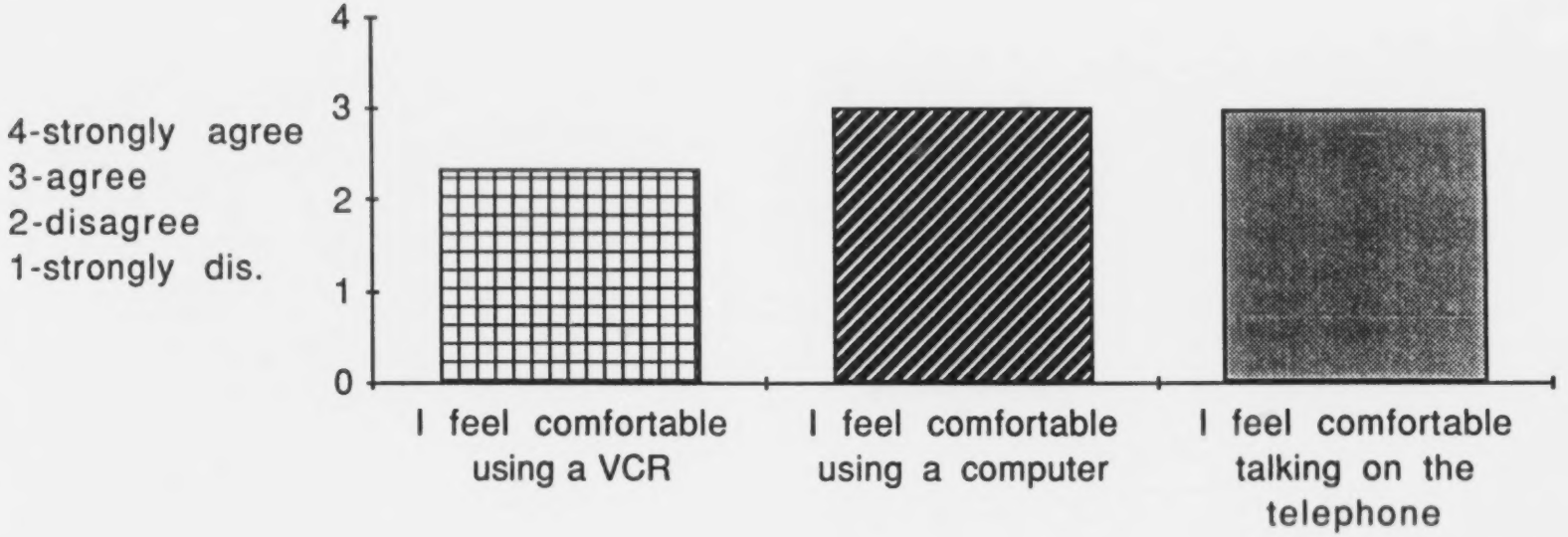

Figure 5

Health Occupations II
Student Evaluation of Program Components
1989–90 School Year

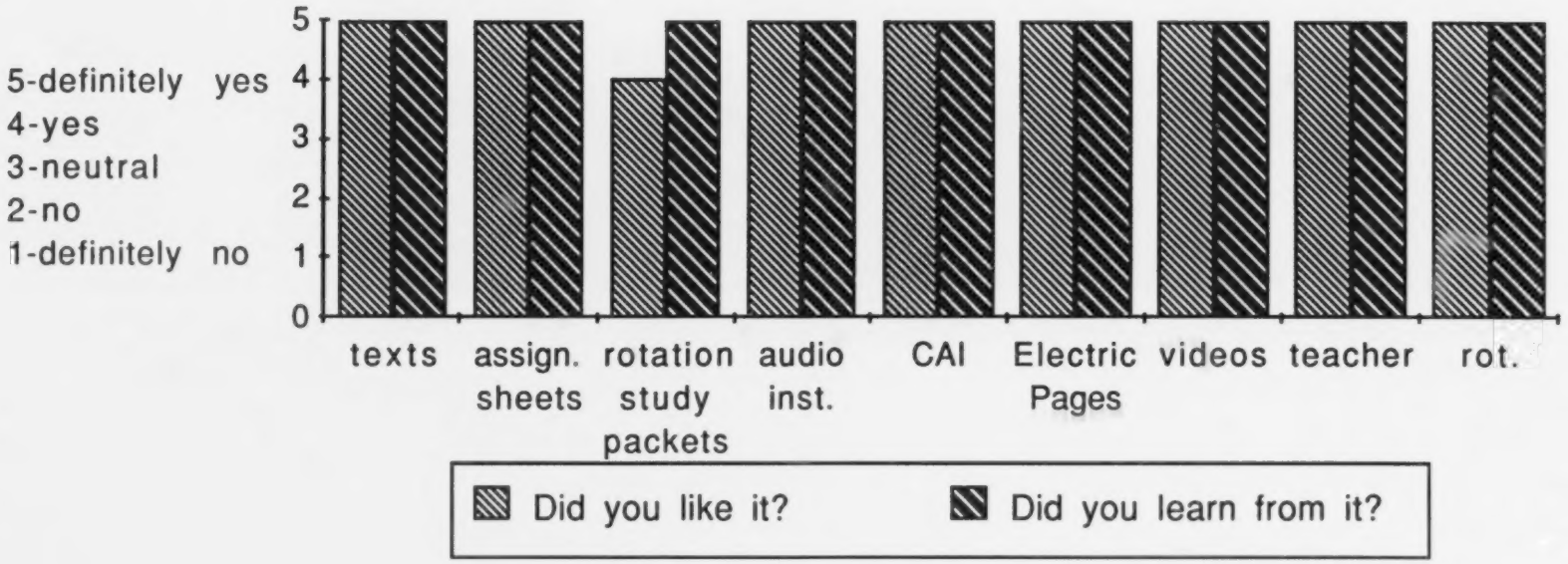

Figure 6

Health Care Science
Student Evaluations of Program Components
1989–90 School Year

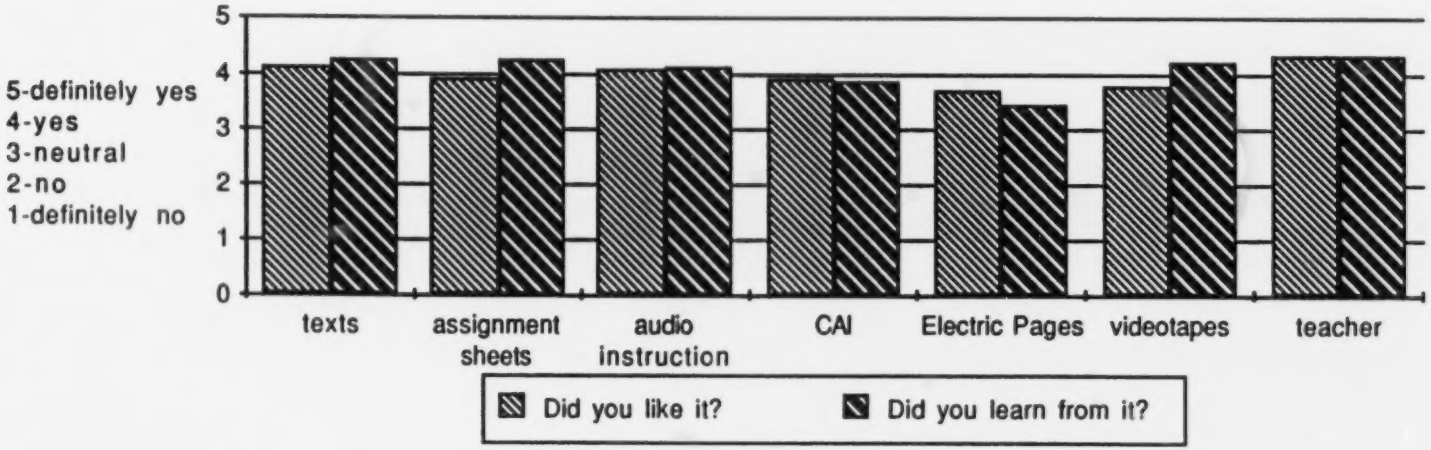

Figure 7

Health Occupations I
Student Evaluations of Program Components
1989–90 School Year

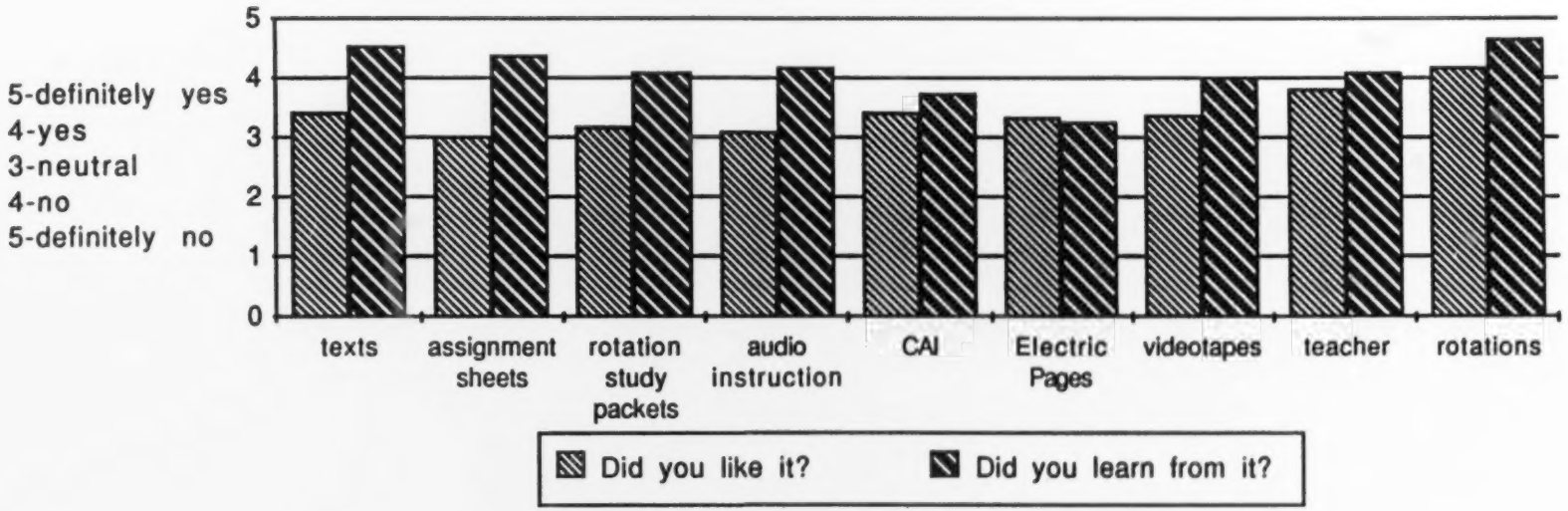

Figure 8

Rotation Experience Evaluations
HO I and HO II
1989–90 School Year

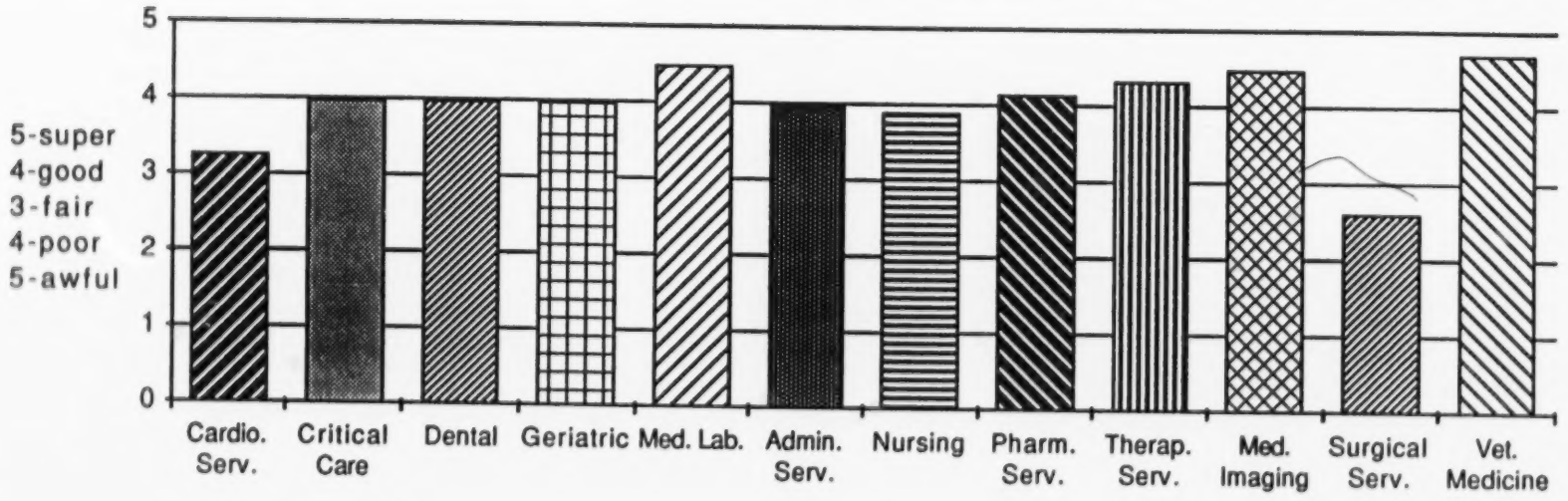

Figure 9

HOE Program 1989–90
Comparison to Other High School Courses

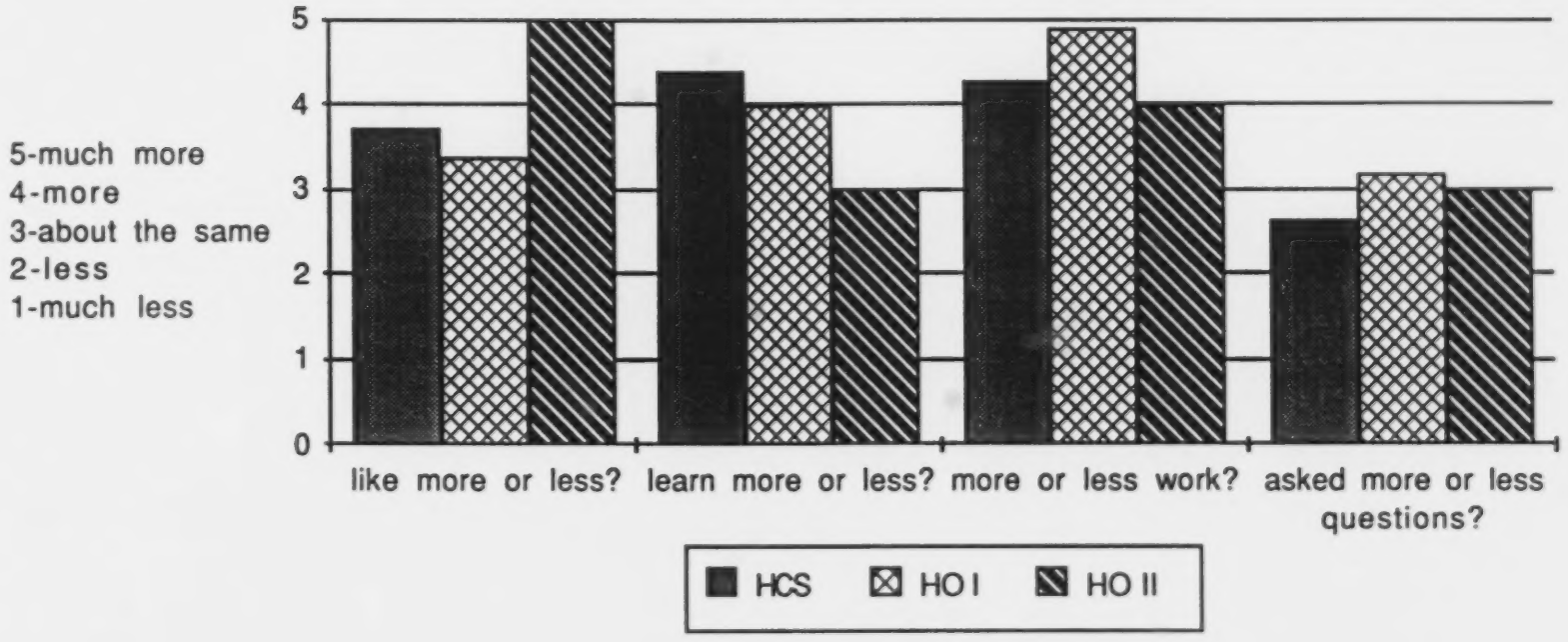

Figure 10